

Weekly Summary Report

USEPA Oversight, Sauget Area 2, Sauget, IL

WA No. 224-RXBF-05XX / Contract No. 68-W6-0025

Week Ending Friday June 18, 2004

This report summarizes the Interim Remedial Action (IRA) work conducted by Solutia and its contractors from June 12 through June 18, 2004 at Site R, Sauget Area 2. The current IRA fieldwork consists of site preparation, barrier wall trenching, and backfilling.

Contractors Onsite

Inquip Associates Inc. (barrier wall construction contractor)
PSI (geotechnical testing subcontractor)
Pangea (subcontractor to Inquip for site maintenance and preparation)
URS (primary consultant for Solutia)

Work Performed This Week

Work at the site continued with a crew of Inquip operators and laborers performing site and trench maintenance activities.

Along the east-west leg of the trench at the southernmost section of the barrier wall, approximately 20 feet of trench was excavated by the hydraulic or mechanical clamshell rigs to total depth. The hydraulic clamshell excavated five and a half days starting on Saturday while the mechanical clamshell excavated and/or chiseled 4 days during the week. Minor maintenance and repairs, were performed on the rigs during the periods of downtime.

Both clamshell rigs were used to clean the trench bottom and to excavate the trench to a greater depth. Only one clamshell was operating at any given time because there was insufficient work space for two rigs to operate in the southern portion of the barrier wall alignment.

Backfill was placed into the trench on Monday and Tuesday during the week, with the daylighted backfill closing the north end of the open trench to station 16+60.

The Koehring 1266 backhoe was not utilized during the week.

Groundwater Migration Control System (GMCS)

The river elevations remained stable between June 12 and June 16, and subsequently increased from 402.63 feet above sea level (amsl) on June 16 to 406.06 feet amsl on June 18, 2004. Correspondingly, the combined flow rate of the extraction well system decreased from 501 gallons per minute (gpm) on June 12 to 350 gpm on June 18.

Seven of the eight barrier wall piezometers, with four inside and three outside the barrier wall alignment, monitored the groundwater water elevations adjacent to the barrier wall alignment during the week. Piezometer 4W, which is the southern-most piezometer outside

the barrier wall, was not reading data throughout the week due to a malfunction. The transducer contained in piezometer P4W will be checked by URS next week.

Table 1 shows the river and piezometer water elevations measured on June 18, 2004 (4:00 PM). Piezometer pairs P2 and P3, located in the center of Site R, showed water levels greater outside the barrier wall than inside, with approximately 2 to 3 feet difference in elevation. At piezometer P1S and P1N, the water levels averaged approximately 2 feet higher outside the barrier wall alignment; however, it should be noted that the barrier wall is not yet constructed in this area. For the piezometer pair P4, the inside-outside wall gradient could not be determined. The river elevation was significantly higher than water levels measured at all piezometers throughout the week, indicating an inward groundwater flow from the river toward Site R.

TABLE 1
River and Piezometer Water Elevations – June 18, 2004 (16:00 PM)

| | Elevation (ft above mean sea level) |
|---|--|
| River Level | 406.06 |
| Piezometer 1S – inside wall (northern-most pair) | 399.72 |
| Piezometer 1N – outside wall (northern-most pair) | 398.54 |
| Piezometer 2E – inside wall (north-central pair) | 398.46 |
| Piezometer 2W – outside wall (north-central pair) | 401.37 |
| Piezometer 3E – inside wall (south-central pair) | 397.53 |
| Piezometer 3W – outside wall (south-central pair) | 401.14 |
| Piezometer 4E – inside wall (southern-most pair) | 396.68 |
| Piezometer 4W – outside wall (southern-most pair) | NA |

Stormwater

No stormwater activities occurred during the week.

Slurry Mixing

Approximately 60 tons of bentonite gel was used to mix fresh slurry on three days of the week. The slurry, when pumped from the south holding pond to the open trench near station 14+90, was tested frequently to assess its viscosity and adjusted with a blending pump using water from the fire hydrant, as necessary. The viscosity of the slurry was measured using a Marsh funnel, with results generally meeting the specification.

Spoils Handling

During the week, spoils were transferred from the excavation area along the southern leg of the barrier wall alignment to either the temporary stockpile area on top of the landfill or to the backfill mix pad. Spoils were additionally used during the week to fill the area between stations 29+00 and 31+00 on the northwest part of the site that had been previously excavated in panels with the mechanical clamshell. Spoils were used to fill this area to prevent widening of the trench in preparation for excavation at the north end of Site R.

Barrier Wall Construction

Inquip continued excavation of the trench along the south arm of the barrier wall alignment with the hydraulic and mechanical clamshell rigs used for both trench bottom cleaning and deeper excavation. The Koehring 1266 backhoe has been moved to the north-central portion of Site R, near station 26+00. The 1266 backhoe is scheduled to start excavating in this area in the following week.

As of June 18, the open trench was approximately 1,150 feet in length along the barrier wall alignment from station 5+10 to station 16+60 (please refer to Solutia's map for locations). Note that in the previous weekly report (for the week ending June 11, 2004) it was stated that the trench was open to the southeast corner at station 5+00. However, the location along the eastern end of the southern leg of the barrier wall had been incorrectly marked resulting in incorrect trench depth measurements over a short linear distance. Following surveying of this area, the station markers alongside the trench have been correctly placed and hence trench depths are now being reported accurately.

Fresh bentonite slurry was pumped into the open trench as needed to keep the excavation open on three days of the week. Slurry samples were collected from the top and the bottom of the trench daily; fresh and trench slurry samples were tested for viscosity, density (unit weight), filtrate loss, pH and sand content during the week. All the results either met the specifications or satisfied the quality targets. The mechanical desander operated daily throughout the week, however the intake valve frequently became plugged and the desander was stopped and cleaned.

During the week, Inquip mixed and placed into the trench approximately 510 cubic yards of backfill materials. Backfill operations took place on two days during the week. The backfill consisted of spoils with the addition of two percent bentonite and five percent clean clay soil.

The backfill was tested by PSI for slump, unit weight and moisture content. The unit weight of backfill placed during the week measured between 115 and 128 pounds per cubic foot (pcf). Slump test results were between 4 to 4.5 inches, and the moisture content results ranged from 19.7 to 24.8 percent. All test results met the minimum requirements. Tests on the backfill mixture to be conducted offsite included permeability and gradation.

The bottom of the trench at and ahead of the backfill toe was cleaned using the clamshell rig prior to the backfill placement. Depth-to-bottom measurements were made every 10 linear feet of trench to ensure the bottom of the trench was at a consistent depth and on top of bedrock. These depth measurements were performed with the clamshell rig's instrumentation and were manually confirmed at two locations with the downrigger (plumbob on wire). On a daily basis, two samples were collected by PSI with a clam sampler from the top of the placed backfill in the trench prior to backfill placement. These samples were visually checked to ensure that the backfill surface in the trench was clean and free of any sand.

During the week, the trench depths were measured each afternoon. On Friday June 18, a severe thunderstorm interrupted the trench profile measurements, and it was completed the morning of June 21. The trench depth measurements from this profile are shown in Table 2, and depicted in Graph 1 in comparison to the trench depth profile measured on June 11. Graph 2 shows the overall progress of the barrier wall construction.

Other Activities

Pangea completed work during the week to construct the extension of the temporary spoils containment area on top of the Site R landfill. An engineered berm, with approximately 1:1 sloped sides, constructed in one-foot lifts, compacted and tested to meet density specifications has been constructed to extend the spoils containment area to the north. This extension of the containment area is intended to be used to contain trench slurry or spoils. In order to provide space for backfill in the trench next week, trench slurry will be moved to the new containment area.

Ameren was onsite during the week to observe the power lines located above the southeast end of the barrier wall trench, by station 5+00. The westernmost of the two power lines will be removed next week so that the clamshell rigs can excavate the final panel of the barrier wall in this location. Until the power line has been moved, the clamshell rigs cannot excavate this segment.

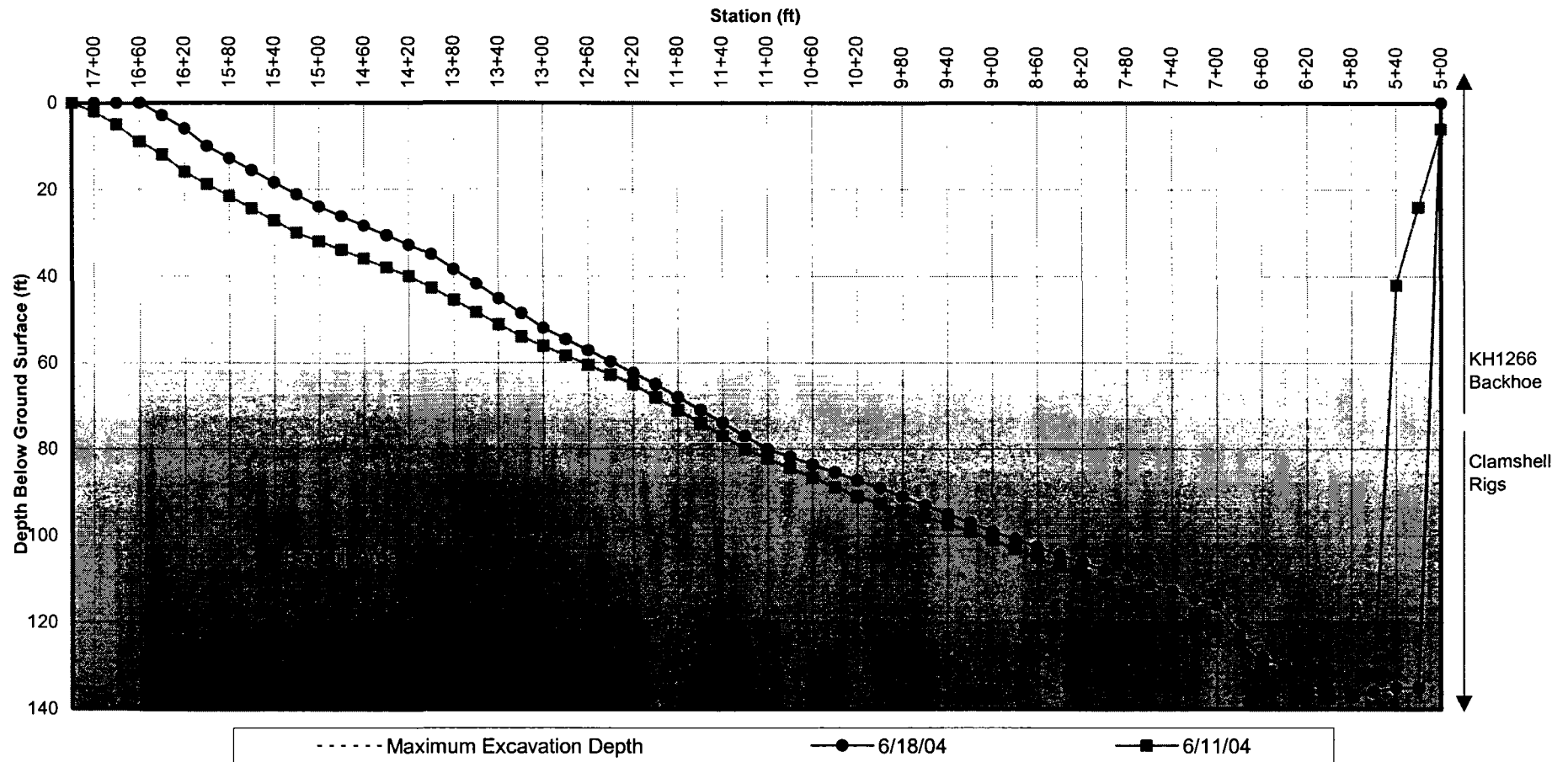
Inquip continued to build the work platform near the northwest corner of the barrier wall alignment, extending along the northern leg. The work platform is constructed of gravel and finer rock aggregates and is compacted to form a base upon which the excavation equipment will operate.

TABLE 2

Trench Profile (Downrigger Measurements) for the Barrier Wall Trench – June 18, 2004 (PM)

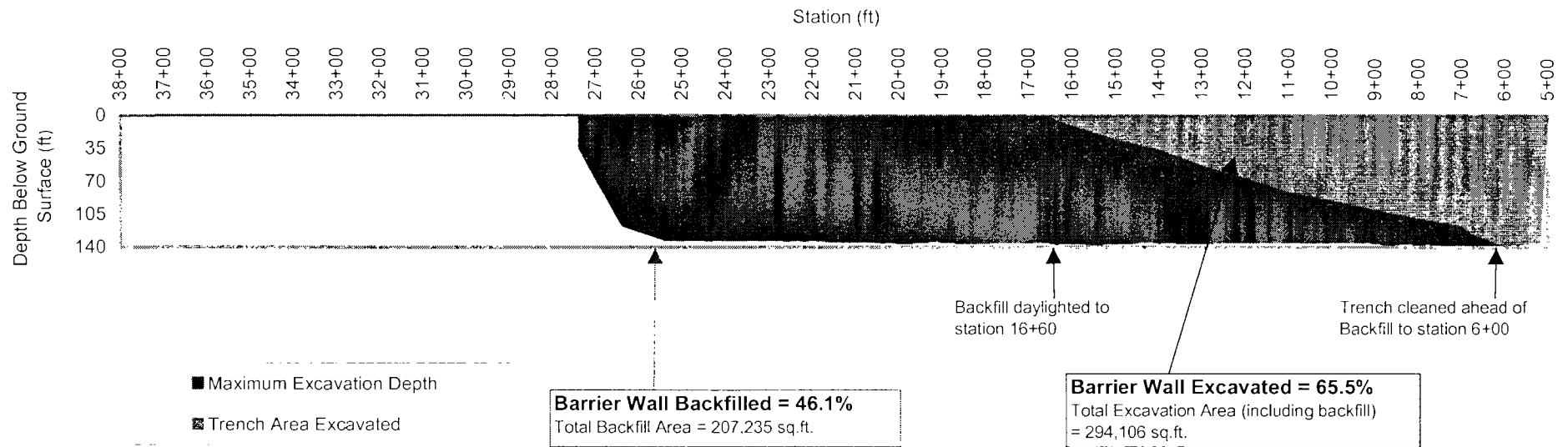
| Station ID | Depth to bottom (ft below ground surface) |
|------------|---|
| 5+10 | 7 |
| 5+20 | 135 |
| 5+40 | 135 |
| 5+60 | 136 |
| 5+80 | 137 |
| 6+00 | 138 |
| 6+20 | 135 |
| 6+40 | 130 |
| 6+60 | 128 |
| 6+80 | 123 |
| 7+00 | 116 |
| 8+00 | 108 |
| 9+00 | 99 |
| 10+00 | 89 |
| 11+00 | 80 |
| 12+00 | 65 |
| 13+00 | 52 |
| 14+00 | 35 |
| 15+00 | 24 |
| 16+00 | 10 |
| 16+40 | 3 |

**Graph 1 - Weekly Barrier Wall Construction Progress
June 12 through June 18, 2004**



Note: Data plotted for the week through PM measurements on 6-11-04 and PM measurements on 6-18-04.
Some data points are interpolated between the available data points where trench depth measurements were read.

Graph 2 - Barrier Wall Construction Progress by June 18, 2004 (PM)

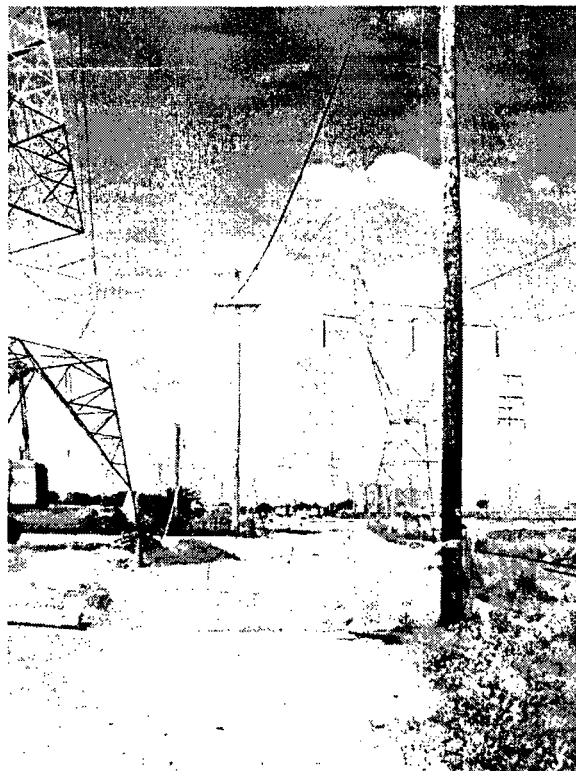


Note: Data plotted for week through PM measurements on 6-18-04.

Photos from June 12 through June 18, 2004:



Pangea continued work during the week to construct the northern berm extending the temporary containment area on top of the landfill (June 18, 2004).



The western of two power lines will be temporarily removed prior to excavation of the trench at station 5+00 (June 12, 2004).

Weekly Summary Report

USEPA Oversight, Sauget Area 1, Sauget, IL

WA No. 239-RSBD-054V / Contract No. 68-W6-0025

Week Ending Friday June 18, 2004

This report summarizes the Remedial Investigation/Feasibility Study (RI/FS) fieldwork conducted by Monsanto, Solutia, and their contractors from June 12, 2004 through June 18, 2004 at Sauget Area 1 Sites. The current RI/FS work consists of a dense non-aqueous phase liquid (DNAPL) Characterization and Remediation Study. CH2M HILL provided field oversight of work throughout the week.

Contractors Onsite

- Golder Associates (consultant for Monsanto/Solutia)
- Bird Seismic Services Inc. (seismic survey fieldwork subcontractor to Resolution Resources Inc., who is subcontracted to Groundwater Services Inc. for the seismic survey and will perform all data evaluation.)

Work Performed This Week

Bird Seismic Services Inc. (Bird) were onsite during the week conducting the Geophysical Survey at Sauget Area 1. This phase of work is part of Task 3 of the Groundwater Services Inc. (GSI) Work Plan for the DNAPL Characterization and Remediation Study. The seismic crew worked all seven days throughout the week.

Seismic Survey

The three-dimensional seismic reflection survey is being conducted to map the bedrock surface and to identify topographic low points that could potentially enable DNAPL to accumulate.

The seismic survey consists of the following components:

- A shock grid is positioned on a 27½-foot grid spacing. Every point in the grid will be 'shocked' – that is, the energy-source (hammer) will be applied at each location on the shock grid when collecting data.
- A receiver grid is positioned on a 55-foot spacing. The receiver grid is the network of geophones (installed into the ground surface) connected by cables running east-west that will be used to listen and detect the response to the shocking of the ground surface with the hammer.
- The shock grid is initially laid out and marked with paint and flags, each row is incrementally numbered. Every third point in the shock grid is located using global positioning survey (GPS) technology. A base for the GPS unit was conventionally surveyed in relation to a local USGS survey monument.

- Cables are strung east-west across the receiver grid, connecting all the geophones. The cables are tied into three seismographs.
- The hammer, a truck-mounted 207 pound spring-recoiled hammer that hits a metal plate on the ground surface, is set to hit the plate fourteen times at each shock point. The seismographs simultaneously collect data when the energy source is applied at each shock point.
- Following collection of data, the cables and geophones are picked up and moved to the next survey section.

On June 12 and 13, Bird finished collecting data in the northern and central sections of Site I, located on Cerro Copper property. Approximately 380 feet across the southern end of Site I remained to be surveyed.

Between June 14 and 18, Bird established the survey grid in the southern section of Site I within Cerro Copper property, across Site H and the areas between Site I and Site H on the Village of Sauget (firestation) property, part of the area south of Site H on Keeley property, and part of the area east of Site H on Metro equipment property.

Difficulties with the GPS unit throughout the week lead to some survey grid points being laid out manually using a compass and tape, however, these points were located using the GPS system later in the week.

Areas around the buildings on Keeley, Village of Sauget and Metro Equipment property were surveyed and marked as completely as possible. Where buildings are obstructing the survey grid, shock and receiver points were placed as close as possible to the building. The survey crew indicated that in most cases the energy applied and the receivers located around the building will be sufficient to collect a continuous map of the bedrock surface without significant data gaps.

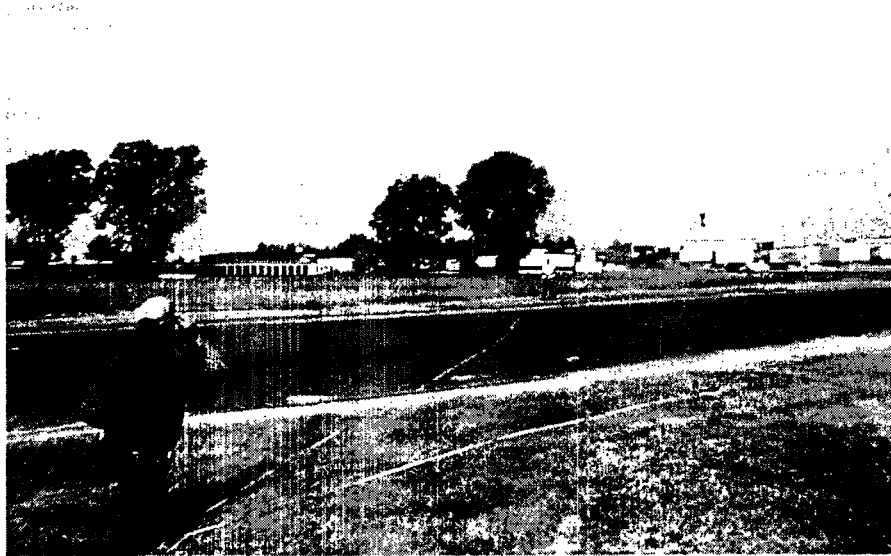
On June 18, Bird resumed data collection in the southern section of Site I on Cerro Copper property. By the end of the week, seismic data had been collected over approximately 85 percent of Site I within Cerro Copper property, with approximately a 200 feet long (and extending east-west across the property) section remaining at Site I to collect data.

Work Anticipated Next Week

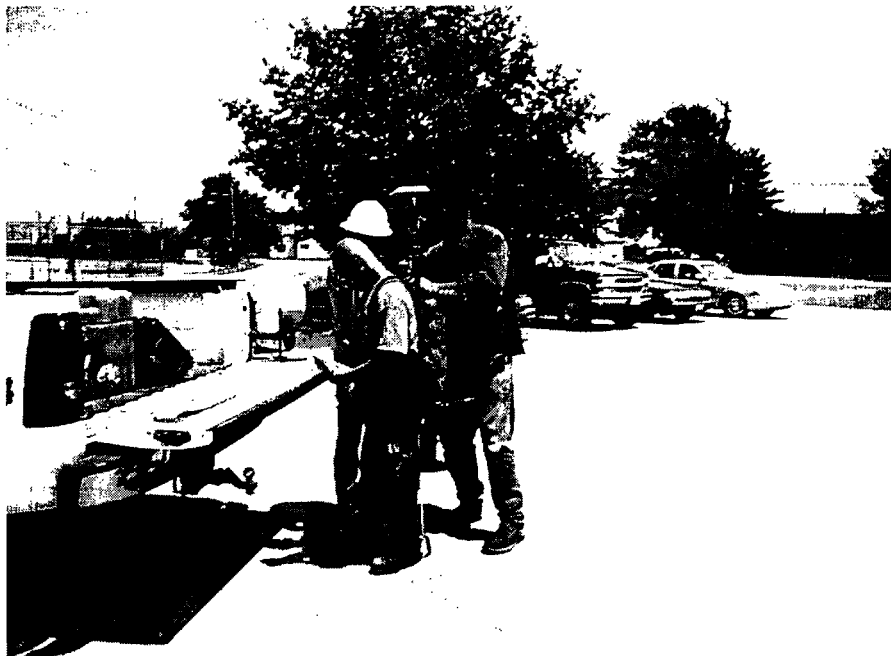
Bird will continue the seismic survey and finish collecting data and all work at Site I on Cerro Copper property over the weekend of June 19. During the following week, Bird will continue the seismic survey across Site H and the surrounding section in the southeast section of the Sauget Area 1 survey area, south of Queeny Avenue. Site G will require some clearing and grubbing in order to lay out the survey grid, enable the GPS unit to communicate with the satellite, and collect data from the site. A crew is scheduled to start clearing Site G on June 21, 2004. At this time, it is anticipated that the seismic survey will not be completed until the week ending July 2, 2004.

Following the collection of all data from the seismic survey, the data package will be sent to Resolution for processing and evaluation.

Photos from June 12, through June 18, 2004:



Laying out the grid for the seismic survey at Site H
(June 15, 2004).



Setting up the GPS system used to locate grid points for the seismic survey
(June 16, 2004).